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Comprehensive Strategy to Conduct Survey for Improving Response Rate in Halal Supply Chain Management

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***Abstract*— A research survey has been widely known by many scholars and is very important in data collection; however, it has a real disadvantage of its lower response rate. This is possibly due to incomplete comprehension on how this survey can be made to work effectively especially in supply chain industries that deal with confidentiality and various parties interest. Therefore, this study aims to provide comprehensive strategies that should be conducted to improve response rates. Meeting this aim, this study reviewed studies focusing on strategies to prepare a suggested survey to increase its response rate. Based on an extensive research in literature and local field, the authors found articles considered appropriate to be included in this synthesis. Two strategies were found to improve response rate using a effective survey: designing questionnaire and practical strategies. Designing questionnaire strategy has prominent factors in the beginning steps before sending a questionnaire. The latter is a critical step to get respondents feel that they like to fill a questionnaire. This study contributes to academic literature about how to improve response rate using comprehensive strategies where the previous studies have explained those findings partly.**

***Keywords*—** *Halal Supply Chain, research approach, survey,*

1. Introduction

Most supply chain management (SCM) scholars who use surveys in their research will have an appreciation of the difficulty of attaining sufficiently large samples and high response rates. Prior studies have examined this problem in-depth and have proposed special techniques to such as nurture responses, reduce the concern of nonresponse bias [1]. A limited number of observations may be due to particular characteristics of the data at hand and/or constraints related to the research project. In some cases, the sampling frame may be small (i.e. a small populations study) causing samples to be small even if response rates are high. Situations in SCM which may lead to small population survey studies are An investigation of some corporate-level phenomenon in an industry with a small number of firms (e.g. automotive manufacturers, stock listed container shipping lines). A study on the production network (i.e. all plants) of a global manufacturing firm. Even large firms will have a limited number of plants. Research on cost, pricing, or accident issues in freight transportation at Class I railroads/carriers in the USA, Canada, or Mexico. In other cases, collection of survey data may be too difficult, time consuming, or costly to allow the collection of large samples. In SCM there are several examples such as The collection of data from within the buyer and supplier organization, that is, from matched pairs of buyer-supplier dyads. A study requiring a project level analysis (e.g. outsourcing projects, buyer-supplier innovation projects) with multiple surveys to be collected from several project team members. A research project aiming at investigating a phenomenon over time (i.e. the same respondents should complete the survey at multiple points in time).

2. Pre-notification

Although empirical findings of pre-notification methods in collecting data demonstrates mixed results, numerous authors still believed that pre-notification enable to generate significant response rates [2-11]. The reasons of pre-notification enable to effort response rate as that ‘pre-notification alerts people that the survey is coming, thus reducing the likelihood of an interested recipient

International Journal of Supply Chain Management
IJSCM, ISSN: 2050-7399 (Online), 2051-3771 (Print)
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inadvertently discarding it. In addition, they mentioned that pre-notification also could establish legitimacy of the survey [4] .

Empirical evidences from ref. [7] study in textile companies, for example, seemed that pre-notification using telephone has a statically significant to 16% compared to without telephone pre-notification. In addition, based on [4] study literature of 19 of the 22 comparisons of the effect of pre-notification demonstrated that pre-notification increased a response rate (a range between 9% and 47.4%).

3. Follow-up

It is argued that follow-can substantially improve research survey of the expected rate of return [12-14], [4], [5], [11]. Follow-up has a prominent factor to reduce non-response rate because it is more likely a form of appreciation in social communication and help reinforce and remind non respondent to complete the survey [4],[5]. In addition, respondents might miss or forgot to complete the questionnaire, follow-up by including a questionnaire are likely helpful of the problems [14]. Additionally, follow-up "may have given the impression the study was important, so they filled questionnaire [14]. Moreover, follow-up also important to surveyor who conduct a survey without an advance notice. This argument was proved by Kaplowitz, [15] who found that follow-up has a significant effect on response rate in research survey to respondents who did not receive pre-notification.

However, before conducting a mail research survey for example, a surveyor was suggested to understand their population and calculate the surveyor's research budget. Firstly, a surveyor should know about their population. This understanding is beneficial for the surveyor to design appropriate strategies for conducting follow-up. For example, ref. [16] implement formal and informal questionnaire follow-up techniques to university administrators. They divide that group into Administrator University, faculty member, graduate assistants, and undergraduate students. Overall of their study was 88% of response rate and the follow-up techniques strategic seemed that the humorous follow-ups (rhino) were associated with undergraduate students than graduate students. Then, compared to faculty member, the humorous "eyes" was more effective targeted to graduate assistants. In addition, graduate assistants yield higher response rate than undergraduate when a surveyor use the whimsical violin techniques follow-up. Next, formal follow-up letter was more effective targeted to administrators rather than undergraduates.

Secondly, a surveyor should calculate the research budget. Budget is the most important for conducting follow-up. As using follow up is costly since they know about the budget, a surveyor can design appropriate strategy that will carried out for he/r survey. Ref. [4] noted that current follow-up strategies can be conducting by sending a post-reminder, posting second mailings and phoning contact and Dillman [3] multiple follow-up strategies ('included telephone and postcard). From those strategies, they found that a follow-up using postcard was the most cost effective in dollar of following up non-respondent for generating reasonable response rate. In addition, In addition, if surveyors know the phone number of respondents, another best option can be use telephone reminders as a follow-up technique to yield considerable response rate. Based on ref. [4] study, they suggested that "if return rates are the main issue, then using the Dillman strategy should be used. If cost-effectiveness is the main issue, then using postcard follow-up is best. The effectiveness of second-surveys and telephone follow-ups depends upon availability of telephone numbers" [4].

Number of times of follow-up should be done at least twice to yield effective result of response rate . Dillman [3] with his TDM recommend that follow-up should be conducted three times for effectiveness of response rate. Likewise, [20] study demonstrated that with four follow-up letter and two phone calls yield significant response rate over 81%. Brennan [19] study demonstrated that the range of 62.5 to 66.5 % response rate was associated with two follow-up research mail outs. Lastly, one of reasons of follow-up is that respondents might miss or forgot to complete the questionnaire, follow-up including questionnaire replacement has been considered as the most effective follow-up by several authors [21-23], [14].

4. Sponsorship

Many authors suggested that sponsorship, if any, is recommended to improve research response rate [6]. Ref. [24] found that government sponsored can increase an additional 12.4% responses compared to similar studies with the same numbers of respondents and similar salience to the respondents. Similar finding from further study such [11] that identifying of survey sponsors improved higher returned questionnaire to 48.9 %.

Ref. [25] investigated the effectiveness of university sponsorship to obtain the expected rate of return in several cities in the USA. They found that university sponsorship is effective to achieve higher level of response rates. Their finding is in line with earlier studies such [4] Interesting finding of their study is that home city of the university sponsorship has a more effectively in increasing response rate than out-of-state cities.

According to ref. [26], the sponsor of the research has different key factor of the respect of respondents. They suggested that "in the survey of academicians the sponsor was a commercial research company, whereas for the practitioner survey the sponsor was a major university".

5. Mail vehicle

Mail out of questionnaire expedition also influences response rate. It is believed that using high-class mail vehicle has a lower non-response rate [27]. Ref. [27] , for example, sent a package of questionnaire to one half of total 120 respondents via Federal Express and another one-half respondents were also sent the same package of questionnaire using regular mail. The results demonstrated that sending mail survey via FedEx improve response rate to 61.7% compared to via regular mail with 38.3% return.

Ref. [4] assumed that there are two reasons using high-class mail vehicle has significant effect on response rate compared to usual postage. First, bulk-rate postage is associated with "junk mail" and would tend to suggest that the survey is not important. Second, bulk-rate postage does not receive the handling priority of fist-class [3]. In addition, Ref. [27] 'suspect using high-class mail vehicle "stems largely from the legitimacy conferred by the use of a mail source that people associate with important mail'. In addition they predicted that using high-class expedition to vehicle questionnaires is likely that the survey is so highly important that a researcher wants to budget more money to get quick responds.

6. Return envelope and stamps

One of the most important of improvement of research response rate is whether surveyor provides paid stamped envelope or not. It has been a consensus that surveyor should send return envelope and stamps all together with questionnaire. Return envelope and stamps were an important predictor of response rate. Since a surveyor facilitates a return envelope and stamp, he/she encourages response by providing questionnaire return [8]. In addition, respondents are not required by payment for buying stamp and envelop for return questionnaire.

Compared to business reply or pre-paid envelopes, stamped return is leading to business reply in term of response rate. Ref. [4] compared 42 of the 50 studies about stamped return and business reply seems that postage of questionnaire return was much higher than business reply. Likewise, Lavelle, Todd & Campbell (2008) conducted a study of the effectiveness of stamped envelopes and prepaid enveloped in a mail survey of Hospital patients in Manchester, UK. They found that response rates that were obtained from using stamped envelope and pre-paid envelope were 31.8% and 26.9% respectively. Although the difference is not significant, stamped envelope gains consideration in term of cost because this way is cheaper than pre-paid return.

Evidence of return and stamps effect to increase research response rates has been discussed by several investigators. Based on a meta-analysis study from [10] of papers published from 1940-1987 demonstrated that return postages affect improvement of the representative of the sample.

7. Monetary and non-monetary incentive

It is believed that incentives have a substantial impact on improving research response rate [7],[9],[10]. Incentive can be in the form of monetary and nonmonetary rewards (pens, pencils, stationeries, books, movie tickets, door price, offer of survey results etc). In addition, payment of incentives can be done by prepaid which is included with the questionnaire and by promising recipients with certain incentives when questionnaire is returned [11].

Ref. [11] found that monetary incentive created a superior effect of research response rate to 50.5% compared to non-monetary incentives (35.2 %). In addition, they also found that prepaid monetary incentive has greater effect on response rate compared to a promised monetary incentive. This study also supported earlier studies such ref. [24] who contended that prepaid monetary incentive has a positive influence on the final response rate.

Furthermore, amount of money paid to respondent is linear relationship with response rate. The higher money incentive paid to respondent to participate in a survey, the greater response rates is achieved [4]. Likewise, ref. [30] study of primary care physicians demonstrated that inducement of $

5 incentives to respondents has a greater effect on response rate than with $ 2 incentive

Non-monetary incentive has attractive factors to enhance response rate. Numerous authors tested the effect of non-monetary incentives on response rate [19]. Examples of non-monetary incentives are books, keychain, key rings, discount coupon, stamps, the result of research, chocolate, pen, stationary, sport or movie tickets, and appeals etc.

In some cases, non-monetary incentive was applied because in the country, monetary incentive such in New Zealand was illegal. Ref. [19] offer alternative way by giving respondents chocolate to encourage respondents to participate in their survey in new Zealand. A chocolate is offered as the incentive.

The result demonstrated that considerable response rates were obtained by stimulating respondents to complete the survey by a chocolate as incentive. Their finding was in line with the prior study such ref. [11] study that non-monetary premium and rewards lead response rate over no offering non-monetary incentives.

Behind the advantages of monetary incentive to effort higher response rates, incentives form cause problems of potential non-responders. This incentive may cause the respondents feel uncomfortable when they do not respond to the questionnaire. Further, a respondent cannot basically reject the incentive, while some non-respondents will give back the incentive in the envelope designed for the completed instrument. Bigger incentive might make guilt. “Token financial incentives can be a cost-effective way to increase wildlife survey response rates and increase data quantity and quality” [31].

Besides improving research response rate, inclusion incentive may boost rate of return quickly. A surveyor might able to reduce follow-up, reprinting questionnaire and posted-reply and envelope cost compared to no incentives. Although providing incentive is more effective both in response rate and economical reason (reduce follow-up, re-printing questionnaire and return postages costs) in certain population such as physicians [30], data collected for higher management level in organizations will create problems. Giving money $ 1-10 is too small for them and it may make them disappointed or mad because their time is valued 1 – 10 dollar only. Similar findings from [27] of study in the US nonprofit organization that this incentive might make respondents upset. For example, their respondent argued about providing incentives is found that this highly strange issue would regard the whole project with new mistrust [27]. So, a surveyor should consider money incentives for types of respondents. For example, students, household, lower level employees, and customers targeted as respondents with inclusion token incentives or $ 1-10 may be justified for more cost-effectiveness, but not for respondents in higher management level.

8. The day respondent received a questionnaire

The day respondents received questionnaire is considered that it is likely increase research response rates. In addition, surveyor should identify the characteristics of respondents. For example, customers, household and employees have different treatment of the day that they receives questionnaire. For example, a response rate for household and consumer as respondent may higher when they receive a questionnaire at late in the week. This is because they have more time to complete a questionnaire in the weekend. More specifically, ref. [28] elder women prefer to response questionnaire if the questionnaire arrive in late of the week.

In contrast, if respondents were employees, the treatment was different. Although, ref. [5] study in small and medium-size companies in a state of the USA showed that the results was not significantly different. They argue that respondents might be suggested to send a questionnaire to respondent that arrive in the day that respondent might have a lower working loading. Moreover they observed that for certain respondents, for example business people, Monday and Friday might busier time in a week than other day. Again, they added that heavier working loading of people is depending on the characteristic of their work. Hence, when a questionnaire arrived at the time respondents has a lower working load, they might respond a questionnaire or at least see the questionnaire. In contrast, since respondents were busy, they were more likely not to respond the questionnaire and they might respondent in another day when they have plenty time to respond the questionnaire. However, their results should be carried out a further investigation to gain more evidence.

9. The month of the first mailing

Sending of mail questionnaire should also consider the months that seem the low activities during the years of the works. For example, sending a questionnaire for students and academics were not appropriate when holiday time and the late of school times [29].

10. Conclusion

The aim of this article is to explore techniques to improve response rate in supply chain management according the previous articles. According to the above discussions of some findings techniques improving response rate, we summary several points enhance response rate: 1) questionnaire design and 2) practical strategies. Questionnaire design is the first way for researchers to attract an attention from respondents to fill in each question within sheets of questions. Furthermore, in order to attract respondents' attention, researchers should consider how to write cover letter; design and layout questionnaire; choose type of questions, font size, layout of questionnaire and cover letter, color of questionnaire paper, size of paper, and reproduction methods.

After questionnaire design is developed and created, the next step is a practically strategy. This way should be considered by researchers to generate significant response from respondents. According to the previous literature, we claim that there are several keys to success to achieve higher response rate in supply chain management: pre-notification, follow-up, sponsorship, mail vehicle, return envelope and stamps, monetary and non-monetary incentive, the day respondents received a questionnaire and the month of the first mailing.

Although this paper has comprehensively explained the ways to improve response in supply chain management rate that we compile from several sources and different countries through long-time periods, this paper may need to be improved by conducting further research to clarify the judgment from previous findings through survey study. Further study can use indicators compiled in this paper to test which one(s) from above indicators support the previous literature in enhancing response rate.

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